NOTES, APPARATUS, REVIEWS, ETC.

Weigert's Iron-Haematoxylin Stain

BY JAMES H. STEBBINS, JR.

In the Van Gieson muscle and fibrous connective tissue stain, it is customary to stain the tissue first with one of the haematoxylin stains, and then try to counterstain with picric acid-acid fuchsin. Those familiar with the process will have noticed that in order to obtain satisfactory final results, that is, to have the haematoxylin show up well, it is necessary to greatly over-stain with the latter, as the subsequent treatment with the picric acid-acid fuchsin exerts a strong bleaching action upon the haematoxylin, and greatly reduces its strength. To therefore overcome this defect, Weigert has worked out the following stain, which has given me the most satisfactory results. Tissue stained by this process shows the connective tissue stained a bright red to carmine, and the muscle fibres of a bright yellow color, while the cell nuclei stand out sharply in either blue-black or black. Those interested in photo-micrography will find this stain of great help in obtaining sharp, crisp pictures.

The iron-haematoxylin stain is prepared as follows:

1.

Hæmatoxylin ..... 1 grm.
96% alcohol ..... 100 c.c.

2.

Ferric chloride solution (10%) ..... 4 c.c.
Hydrochloric acid (25%) ..... 1 c.c.
Distilled water ..... 95 c.c.

For use mix equal parts of 1 and 2 and stain tissues fixed in alcohol, or formalin, to the desired shade; wash well in one or two changes of water, and then counterstain in:

Saturated aq. solution of picric acid ..... 100 c.c.
1% solution of acid fuchsin ..... 10 c.c.

Rinse in water, dehydrate in alcohol, and mount in balsam. The iron-haematoxylin solution may be kept for several days in good condition, or until it begins to smell strongly of ether.

Watson & Sons' New Catalogue

There is a tendency on the part of microscopists to underestimate the importance of the condenser or illuminating apparatus which is used in all high-power microscopical work. A large number of well-known houses do not even quote anything beyond the Abbé illuminator. But it has been pointed out time and again that the limitations in working with a condenser of this description are very great, and its continued use is probably due to the failure of workers to appreciate these limitations, and because its very want of aplanatism renders it easier to work with than a more accurately made system. Briefly stated, the Abbé illuminator consists of two lenses only, and it is neither aplanatic nor achromatic. The maximum solid cone which it is capable of transmitting is .50 N. A., with the result that, however large an aperture the objective may have, its effective working under critical conditions is reduced by the condenser to .50 N. A.—that is, if an investigator is using a 1-12-inch oil immersion of 1.30 N. A. and Abbé illuminator, he is only actually employing about half of the effective aperture of the lens.

We are reminded of this by a perusal of a new edition of the catalogue of the well-known English house, W. Watson & Sons, 313 High Holborn, London, in which, as is common with the leading English houses, a great feature is made of substage condensers and principally those of large aplanatic aperture. They range from an oil immersion system having a full aperture of 1.35 and an aplanatic aperture of 1.25, through other systems having respectively apertures of 1.0 N. A. with an aplanatic aperture of .9, and another of .5 N. A. with an aplanatic aperture of .48, to the macro illuminator, which is designed especially for producing a uniform illumination of large objects under low powers.

On this account alone this catalogue is worth the consideration of microscopists; beyond this there is a wealth of information in it concerning not only the typical English stands which are associ-